

GENETICS:

I considered the original female *coneyi* taken in 1965 must be a dominant as if it had been a recessive the chances of a pairing in the wild to produce the results shown below in the first brood were too remote.

Red	Type	Total	Percentage of red to total
14	16	30	46.7%

On the assumption that the red form was a dominant the expected and actual results are shown in the following table:

Percentage of "red" *jacobæae* to total emergences

Brood No.		Expected	Actual
1	<i>intermedia</i> ♂ × <i>coneyi</i> ♀	75%	67.2%
2	Typical ♂ × typical ♀	nil	nil
3	Wild typical ♂ × <i>intermedia</i> ♀	50%	50.7%
4	Typical ♂ × typical ♀	nil	nil
5	<i>coneyi</i> ♂ × typical ♀	50%	47.6%
6	<i>intermedia</i> ♂ × wild typical ♀	50%	26%

This proves that "red" *jacobæae* is a dominant, the variation in ground colour, fringes, etc., being doubtless the effect of modifying genes.

On June 30, 1967, a male ab. *intermedia* was taken within 400 yards of the place of capture in 1965 of the original ab. *coneyi* female. This male was paired by A. W. Coney with an ab. *coneyi* female.

In the case of ab. *rubrasuffusa*, however, further results are necessary as these forms only occurred in brood 5. This is probably a recessive which may only be able to express itself in the presence of the "red" gene.

At the time of writing, some 1200 pupae are due to emerge shortly. It is hoped eventually to obtain pairings with the yellow recessive form.

Acknowledgments

Once again the author expresses his appreciation to the following:

A. D. A. Russwurm who has again excelled himself on this difficult subject.
A. W. Coney for continuing the breeding in an exemplary manner.
Bernard Kettlewell for his assistance in breeding from a limited number of pupae so that a sufficient stock is available, thereby spreading the risk.

All the helpers with the mundane tasks of collecting ragwort, cleaning out cages, etc., under the supervision of Mrs. M. B. Watson, F.R.E.S.

"Porcorum", Sandy Down, Boldre, nr. Lymington, Hants,
May 1968.

Notes on Breeding *Callimorpha jacobæae* Linn. (Lep. Arctidae)

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This species is one which although easy to breed has not in the past been given to much variation except for occasional broods of the yellow recessive form. I have bred small numbers in the past without difficulty, the larvae being healthy and not in my experience much affected by virus diseases.

With the advent of "red" *jacobaeae* it was obvious that some large-scale arrangements were necessary.

As I believe in breeding in as near natural conditions as possible, tins and plastic containers were avoided.

In June 1966 when A. W. Coney and myself obtained the first pairings it was found by A. W. Coney that females would only lay on growing plants of groundsel or ragwort.

The moths emerge between 6.30 a.m. and 8.30 a.m. B.S.T. On one occasion when the laboratory lights had been left on for some hours a few emerged at midnight.

The selected pairings are placed in cardboard shoe boxes from which the centre of the lid had been removed and replaced by nylon netting. Pairing occurs the following morning between 6.00 a.m. and 7.30 a.m. B.S.T., and after separation the males are removed and are still fit for setting if required.

The laying cages are prepared in the following way: Selected plants of ragwort about 24" in height and with a single stem are planted in flower pots. Before planting a rolled nylon stocking is placed round the stem, care being taken to see there are no holes and that the mesh is not too large. After planting, the nylon is tied round the stem at the bottom and rolled up over the plant. This ensures that the leaves are not damaged. A cane is then inserted in the pot to act as support. One female is placed in each container, the top then being tied and also tied to the cane. Apart from reasonable watering of the plant no further care is required.

The eggs are deposited mainly on the underside of the leaves, although some females choose flower heads and stems. Oviposition occurs from 12 hrs.-72 hrs. after pairing.

The young larvae require no attention until all the foodplant is exhausted. This time varies as there is considerable variation in the number of ova per female. Usually the larvae are in the third instar before they require transferring to cages.

The cages used for this purpose are of wood construction, 30" × 18" × 12" with a copper gauze back and a glass door which lifts out. The bottom of each cage is covered with $\frac{1}{2}$ " of peat. The ragwort plants are pulled, not cut, as in this way they keep fresh for 48 hours, by which time they are usually consumed. The plants selected are longer than the cages so they tend to jam in a horizontal position.

The larvae show a preference for the flower petals and feed up rapidly, no cleaning out is necessary as the frass remains dry. Pupation takes place in the peat, many pupae lying close together and often touching.

In September the pupae are removed from the cages and placed in small tins, care being taken to remove all those damaged or deformed. The small tins are then placed in a biscuit tin and left in a cold position for the winter. The pupae are examined at regular intervals and any doubtful ones removed. Under these conditions the correct humidity is maintained without mould arising and so far 80% to 85% have emerged.

Porcorum, Sandy Down, Boldre, nr. Lymington, Hants. May 1968.